IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Appellants:	R. Bhattacharya et al.
Docket No.:	1-4-2-2-1
Serial No.:	10/620,045
Filing Date:	July 15, 2003
Group:	2123
Examiner:	Mary C. Jacob
Title:	Method and Apparatus for Automatic Generation of Multiple Integrated Circuit Simulation Configuration

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The remarks which follow are submitted in response to the Examiner's Answer dated August 27, 2007 in the above-identified application. The arguments presented by Appellants in the corresponding Appeal Brief dated May 21, 2007, are hereby incorporated by reference herein.

In the Examiner's Answer at pages 9-20, the Examiner responds to various arguments raised by Appellants in the Appeal Brief with regard to the §103(a) rejection of claims 1, 3, 4 and 6-19 over Boggio et al., "NetworkDesigner - Artifex - OptSim: A Suite of Integrated Software Tools for Synthesis and Analysis of High Speed Networks," Optical Networks Magazine, Sept/Oct 2001, pages 27-41 (hereinafter "Boggio") and Sun et al., "Simulation Studies of Multiplexing and Demultiplexing Performance in ATM Switch Fabrics," Performance Engineering in Telecommunications Network Teletraffic Symposium, 14-16 Apr. 1993, pages 21/1 – 21/5 (hereinafter "Sun"), as well as the §103(a) rejection of claim 5 over Boggio, Sun and Ishida et al., "A 10-GHz 8-b Multiplexer/Demultiplexer Chip Set for the SONET STS-192 System," IEEE Journal of Solid-State Circuits, Vol. 26, No. 12, Dec. 1991, pages 1936-1943 (hereinafter "Ishida").

The Examiner contends that the combination of Boggio and Sun teaches or suggests the limitations of claim 1 directed to providing a user interface permitting user control of one or more configurable parameters of a switch fabric and automatically generating a simulation configuration for the switch fabric specifying interconnections between the integrated circuits of the switch fabric. Specifically, on pages 10-11 of the present Examiner's Answer, and with added emphasis, the Examiner contends that Boggio teaches providing a "user interface permitting user control of one or more configurable parameters for a data network" and specifying "interconnections between the integrated circuits" for a data network, and the Examiner relies on Sun "to show a switch fabric that is modeled and simulated to study performance and to show that different configurations of a model for a switch fabric are possible."

Appellants respectfully submit that the combination of Boggio and Sun fails to reach the limitations of the claimed invention in that both Boggio and Sun disclose arrangements which assume a single fixed switch fabric configuration.

On page 13 of the Examiner's Answer, the Examiner concedes that Sun "teaches the modeling of a single switch fabric configuration (Figure 2) using a fixed routing mechanism (page 21/3, paragraph 6)." The Examiner argues, however, that Sun "further recites that 'other configurations' and 'more complicated' models of a switch fabric can be built" (page 21/3, first paragraph) and that more complicated routing mechanisms can be used, showing that it is known in the art to simulate various configurations of switch fabrics with other routing mechanisms." Although Sun at page 21/3, first paragraph states that "configurations are also possible such as introducing more switching queues with more complicated routing mechanisms," the same paragraph also explicitly states that "[d]imensioning the switch fabric" beyond the "simple configuration" involving a single switch fabric is "beyond the scope" of its disclosure.

Rather, on pages 12-13 of the Examiner's Answer, the Examiner relies on Boggio at page 32, column 2, lines 17-26, which the Examiner characterizes as teaching "different configurations of a network being simulated based on parameters specified by the user." On page 13 of the Examiner's Answer, the Examiner characterizes Boggio at page 30, column 1, first paragraph ("In every network

design, either manually or automatically generated, all network elements are modeled as having a fixed 'back-plane' with specific connectors.") (emphasis added) as "referring to how the 'network elements' themselves are modeled, not that the interconnections between the network elements are fixed."

However, the limitations of claim 1 are directed to generation of an optimal device-level simulation configuration for a switch fabric. On the other hand, as the Examiner herself apparently concedes, Boggio is directed toward network-level simulations rather than device-level simulations of individual network elements such as a switch fabric.

Thus, both the Boggio and Sun references not only fail to teach or suggest the limitations directed to the simulation of at least one switch fabric (e.g., providing an interface permitting user control of one or more configurable parameters of the switch fabric), but rather teach directly away by instead disclosing only conventional techniques for simulation directed toward a fixed switch fabric configuration.

On page 15 of the Examiner's Answer, the Examiner asserts that Boggio and Sun "are considered analogous since they are both in the same field of endeavor, that is, the modeling and simulation a [sic] system such as a data network."

Appellants respectfully submit that Boggio is not analogous prior art and therefore cannot form the basis for a rejection under 35 U.S.C. §103. See, e.g., MPEP § 2141.01(a); *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992) ("In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned."); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992) ("A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem.").

Indeed, in *In re Clay*, the court disagreed with the PTO's argument that the reference and claimed inventions were part of the same endeavor, "maximizing withdrawal of petroleum stored in

petroleum reserves," and instead found that a reference was not reasonably pertinent to the problem with which the inventor was concerned because a person having ordinary skill in the art would not reasonably have expected to solve the problem of dead volume in tanks for refined petroleum by considering a reference dealing with plugging underground formation anomalies. See also *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993), in which the court expressly rejected an argument that a reference to a single in-line memory module (SIMM) for an industrial controller was in the same field of endeavor as a patent application directed to a SIMM for installation on a printed circuit motherboard for use in personal computers merely because both related to memories; rather, the reference was found to be in a different field of endeavor because it involved memory circuits in which modules of varying sizes may be added or replaced, whereas the claimed invention involved compact modular memories.

Appellants respectfully submit that one seeking to reach the technique of claim 1, directed toward generating an optimal device-level simulation configuration for a switch fabric, would not have looked to the teachings of Boggio directed toward network-level simulations rather than device-level simulations of individual network elements such as a switch fabric. Thus, Appellants respectfully submit that Boggio is thus neither in the field of Appellants' endeavor nor logically would have commended itself to an inventor's attention in considering his problem, much less have been an obvious candidate for combination with Sun.

On page 15 of the Examiner's Answer, "the Examiner asserts that since these arts are considered analogous, a reasonable expectation of success would be present in the combinations of the teachings," and on page 16, the Examiner opines that "it would be obvious to simulate a data network such as a switch fabric with the method of simulating a data network as taught in Boggio et al since both are directed to studying the performance of a data network using simulation techniques."

Appellants respectfully submit that because, as discussed above, Boggio is not analogous art, these statements regarding reasonable expectation of success and obviousness are premised on incorrect factual assertions and hence facially deficient. Indeed, the latter statement states that a

switch fabric is a data network, when in fact a switch fabric is typically contained within an individual network element, such as a switch.

Moreover, the statement of motivation contained in the Examiner's Answer and reproduced above fails to remedy the fundamental deficiency of the statement of motivation contained in the final Office Action in that it too fails to provide sufficient objective motivation for the combination and, rather, is also a conclusory statement of the sort rejected by both the Federal Circuit and the U.S. Supreme Court. See *KSR v. Teleflex*, 127 S.Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (U.S., Apr. 30, 2007), quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.").

In responding to Appellants' arguments regarding each of dependent claims 9, 10, 14 and 15, the Examiner asserts that it would have been obvious to have combined section 2, paragraph 3 of Boggio, which the Examiner characterizes as directed to an interface that permits user control of configurable parameters including a network layout, with the alleged teachings of Sun "that 'different configurations' of the switch fabric to be modeled and simulated are possible." It is believed the Examiner's arguments are analogous to, and hence deficient for reasons similar to, those discussed above with regard to the independent claims.

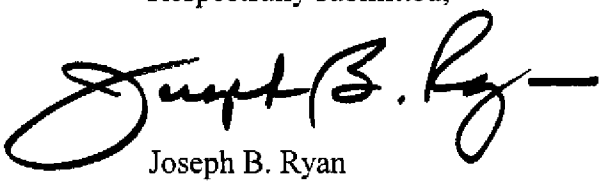
Furthermore, in rejecting dependent claims 14 and 15, the Examiner "asserts that although Sun et al does not expressly teach a 'plurality of generators,' it would be obvious to one of ordinary skill in the art to generate different configurations of a switch fabric for modeling and simulation." Appellants respectfully submit that, as discussed above, "rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR*, 127 S.Ct. at 1741, 82 USPQ2d at 1396, quoting *In re Kahn*, 441 F.3d at 988, 78 USPQ2d at 1336 (Fed. Cir. 2006).

Moreover, MPEP 2144.03 states that "[i]t is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a

rejection was based." Appellants respectfully submits that the Examiner has failed to provide either documentary evidence or an affidavit or declaration setting forth specific factual statements and explanation to support this finding, as required by 37 CFR 1.04(d)(2).

For the reasons identified above and in their Appeal Brief, Appellants respectfully submit that claims 1 and 3-19 are allowable over the prior art of record.

Respectfully submitted,



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